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(56) Documents Cited

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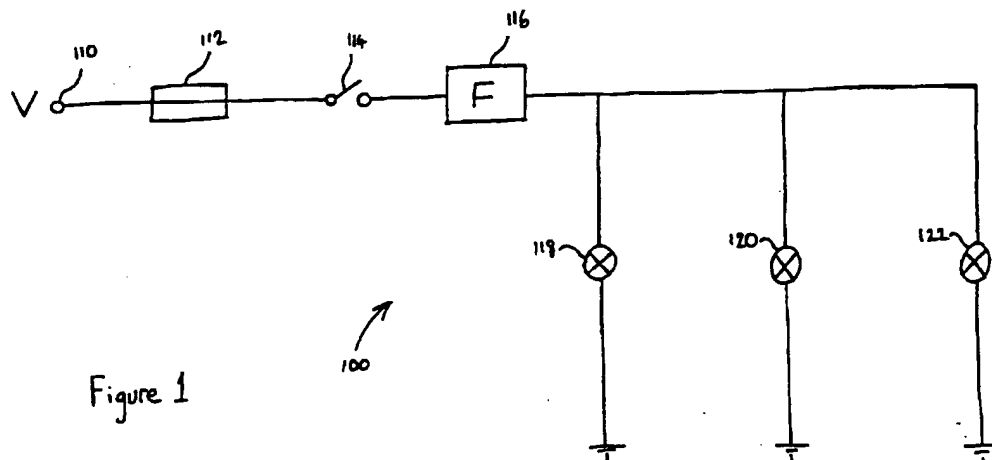
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(54) Abstract Title

Vehicle Direction Indicators

(57) A direction indicator system for a road vehicle, comprising visual means to indicate an intention to proceed straight ahead at a road junction. This system comprises two lamps 118 and 120 one located on the front of the vehicle and the other at the rear. A lamp 122 is provided on the vehicle's dashboard and indicates the activation state of lamps 118 and 120. The lamps 118 and 120 are activated by the use of a stalk situated on the steering column. When the user closes switch 114 by the movement of said stalk, the flasher device 116 causes lamps 118, 120, 122 to flash.



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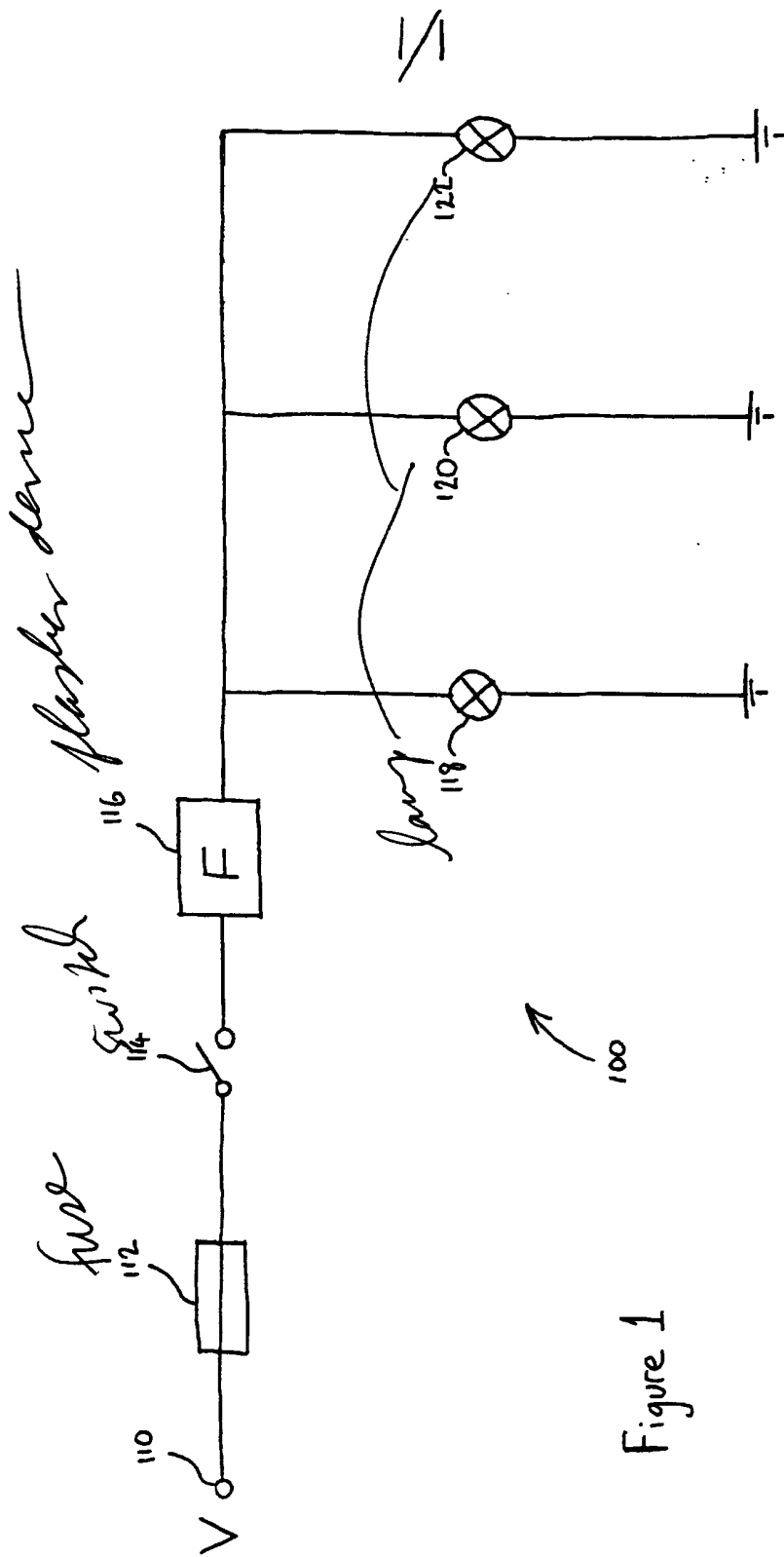


Figure 1

DIRECTION INDICATOR

This invention relates to direction indicators for road vehicles.

Road vehicles are invariably equipped with direction indicators which can be used by the driver to signal an intention to turn in a particular direction at a road junction, to change lane on a dual carriageway road, to overtake another vehicle or to park or pull out from a parking place. However, conventional indicators can in certain circumstances create confusion, especially in connection with road junctions incorporating small roundabouts, commonly referred to as "mini-roundabouts", where there is inadequate road space and hence insufficient time to give the conventional "intention to exit" signal immediately before the intended exit road. Consequently, it is often difficult for a driver approaching such a roundabout to know the intention of another driver already on the roundabout, with consequential increased risk of uncertainty, delay and frustration or, more seriously, collision.

It is an object of the present invention to provide an indicator system which makes a positive contribution to road safety.

According to one aspect of the present invention, there is provided a direction indicator system for a road vehicle, in which the system includes visual means to indicate an intention to proceed straight ahead at a road junction.

It is envisaged that the visual means will comprise a lamp attached at or astride the longitudinal centre-line of the vehicle and positioned to be visible preferably from behind the vehicle as well as from in front of it. Optionally, the lamp cover lens is pointed or otherwise shaped to indicate forwards movement.

Conveniently, the system includes a front-visible lamp positioned for example on or as part of the front bumper, the radiator grille, on the bonnet or on the roof above the windscreen, and a rear-visible lamp positioned on or as part of the rear bumper or the boot lid, tailgate

or rear window. The or each lamp is preferably adapted to give a flashing signal on activation by the driver and may be electrically connected to the existing direction indicator system with suitable adaption to the flasher control unit to accommodate an additional indicator circuit.

In a preferred aspect, therefore, the present invention provides a vehicle direction indicator system comprising a centrally-disposed indicator lamp means, an intermittent power-interruption means and driver-controllable activation means, the said means being electrically interconnected and operatively linked to the vehicle electrical power supply to provide a flashing straight ahead intention signal on activation by the driver.

The driver-controllable activation means preferably comprises a return-biassed switch lever which conveniently is constituted by the existing direction indicator control lever, which conventionally comprises a stalk pivotally mounted to the steering column shroud or housing. For example, in addition to the conventional clockwise and anti-clockwise pivotal movement to signal an intention to turn left or right, the lever may be mounted for pivotal movement in a generally fore-and-aft direction from a central position whereby moving the lever forwardly against a spring bias causes the straight ahead indicator lamp to become activated and release of the lever cancels the indication. Optionally, the lever may be associated with means to retain it in the activated position against the bias force until manually released or until released by a self-cancelling mechanism associated with turning movement of the steering column. The lever may have a fourth degree of movement, rearwardly from the central position, for example to flash the headlights.

The system according to the invention may be operatively associated with the hazard warning lamp system, whereby either the left and right turn indicator lamps can flash in unison to indicate a hazard, or the straight ahead indicators can also flash in hazard mode either in unison with or alternatively in relation to the left and right turn indicator lamps. The system may be fitted to cars as original equipment or may be provided as a kit of components for fitting to an existing car.

In use and on approach for example to a mini-roundabout where it is intended to take the straight ahead exit road, the driver would activate the straight ahead direction indicator to inform other road users approaching the roundabout from other directions, as well as following traffic, as to the intended exit road, with consequential improved decision taking by the other road users and less delay, frustration and confusion.

An embodiment of the invention will now be described, by way of example only, with reference to the accompanying figure, which illustrates a direction indicator system circuit.

The direction indicator system circuit of figure 1, generally indicated 100, is supplied, at terminal 110, with a voltage V which is supplied by the vehicle's electrical system. The supply voltage V is supplied via fuse 112 and switch 114 to flasher device 116. The fuse 112 serves to protect the circuit 100 and other systems within the vehicle from damage. The switch 114 is operable by the driver of the vehicle to select the activation state of the flasher device 116. The switch 114 may be arranged so that it co-operates with a steering column stalk such that movement of the stalk can operate the switch 114.

The flasher device 116 is arranged to provide output signals which drive lamps 118, 120 and 122. Lamps 118 and 120 are indicator lamps which are located on the exterior of the vehicle to provide an indication to other road users that the driver intends to proceed straight ahead. For example, the lamp 118 could be situated at the centre of the vehicle's front bumper to provide an indicator signal to road users in front of the vehicle and lamp 120 could be located at the centre of the rear bumper to provide an indicator signal to road users behind the vehicle. The lamps 118 and 120 could be located elsewhere but it is preferred that they are located at least roughly along the longitudinal centre line of the vehicle. Lamp 122 is a warning lamp situated on the dashboard of the vehicle and it indicates the activation state of lamps 118 and 120. Each of the lamps 118, 120 and 122 could be replaced by a plurality of individual lamps or by one or more LEDs.

When the flasher device 116 is activated, i.e. when switch 114 is closed, it supplies lamps 118, 120 and 122 with pulsed signal which causes them to flash repeatedly. If the switch

114 is opened, then the pulsed activation of the lamps ceases. In this way, the user can control the operation of the direction indicator system.

The flasher device 116 can comprise a relay which, when switch 114 is closed, is caused to latch and unlatch repeatedly thus providing the supply signal from terminal 110 to lamps 118, 120 and 122 in a pulsed fashion.

Claims

1. A direction indicator system for a road vehicle, the system comprising visual means to indicate an intention to proceed straight ahead at a road junction.
2. A direction indicator system according to claim 1, wherein the visual means is arranged on the vehicle such that it is visible from both the front and rear of the vehicle.
3. A direction indicator system according to claim 1, wherein the visual means is arranged on the vehicle such that it is visible from either the front or the rear of the vehicle.
4. A direction indicator system according to any preceding claim, further comprising warning means for indicating the state of activation of the visual means.
5. A direction indicator system according to any preceding claim, further comprising user operable switch means for selecting the activation state of the visual means.
6. A direction indicator system according to any preceding claim, wherein the visual means comprises at least one lamp.
7. A direction indicator system according to claim 6, wherein the visual means comprises one lamp.
8. A direction indicator system according to claim 7, wherein the lamp is arranged on the vehicle such that it is visible from both the front and rear of the vehicle.
9. A direction indicator system according to claim 6, wherein the visual means comprises two lamps.
10. A direction indicator system according to claim 9, wherein the two lamps are arranged on the vehicle such that one is visible from the front and the other is visible from the rear of the vehicle.

11. A direction indicator system according to any one of claims 6 to 10, further comprising control means which can activate said at least one lamp in an activation state in which said at least one lamp flashes repeatedly.
12. A direction indicator system according to any preceding claim, wherein the activation state of the visual means is controlled by a stalk protruding from the steering column shroud.
13. A direction indicator system according to claim 12, wherein the activation state of the visual means can be changed by pushing the stalk away from the driver.
14. A direction indicator system substantially as hereinbefore described with reference to the accompanying figure.



Application No: GB 9912080.0
Claims searched: 1-14

Examiner: Chris Archer
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Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:
UK CI (Ed.Q): F4R (RS, RMP, RL, RFA)
Int CI (Ed.6): F21Q (1/00, 3/00, 5/00) B60Q (1/00, 1/26, 1/34, 1/38, 1/42) B62J (6/00)
Other: ONLINE: WPI, EPODOC, JAPIO

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X, P	GB 2328010 A (HUTHART) see whole document.	1-3, 5, 6, 10-13
X	WO 93/09974 (PARK) see page 6 line 24 to page 7 line 5	1 at least

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

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